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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/790,208 | 03/02/2004 | Koichi Shimizu | 040087 | 1041 |
| 23850 | 7590 | 06/13/2005 | EXAMINER | |
| ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006 | | | ASSOUAD, PATRICK J | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2857 | |

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,208

Applicant(s)

SHIMIZU, KOICHI

Examiner

Patrick J. Assouad

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2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 9-17 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to because there are numerous spelling errors; for example, in Fig. 4 "simulatneous" should be – simultaneous--; "inregral" should be – integral--; in Fig. 14, "Maicromagnetitation Anaasis" should be –micromagnetication analysis--; "condutor" should be – conductor --; in Fig. 15, "Bolindary" should be – Boundary--; etc. A thorough check of all the Drawings is required. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If

the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1-17 are objected to because of the following informalities: all of the pending claims refer to "the LLG equation." Though the LLG equation is identified in the Specification on pg. 3, lines 6-7, as the "Landau Lifshitz Gilbert (LLG) equation," Applicant is strongly urged to incorporate the definition into the claim to avoid any possible ambiguity. Applicant is also urged to provide clear and distinct antecedent basis for "the LLG equation" through all pending claims. See for example, claim 1, line 17, claim 11, line 19, etc. Appropriate correction is required.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-8 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The instant claimed invention is directed to "a computer data signal embodied in a carrier wave for a micromagnetization analysis and used to direct a computer to perform" various process steps. A computer data signal embodied in a carrier wave is NOT a machine, manufacture, or composition of matter. Signals per se are not statutory subject matter. However, the combination of signals

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with a statutory physical structure may be statutory subject matter if a useful, concrete and tangible result is produced. In the instant invention, we see no claimed tangible physical structure; the signal is not tied to any physical structure for transmitting or receiving the signal. The scope of the claims only show or indicate that the signal/carrier wave *may be used* to direct a computer to perform certain steps. Nor do we see any *useful, concrete and tangible result*. See MPEP 2106 for examples of proper claim language when referring to computer-implemented inventions.

Allowable Subject Matter

6. Claims 9-17 are allowable over the prior art of record. The closest patent prior art of record is Takano ('US 6,700,368 B2), and the closest non-patent prior art of record is that which has been cited and provided by Applicant. However, the prior art of record does not suggest or disclose the claimed combination of apparatus elements, most notably:

a) as per independent claim 9, the claimed:

a unit obtaining a time integral of the LLG equation using the solution as an external magnetic field for an unstationary LLG equation;
a convergence condition determination unit determining whether or not micromagnetization obtained by the time integral satisfies a convergence condition;
a magnetic field equation correction unit correcting the magnetic field equation using the obtained micromagnetization when the convergence condition is not satisfied, and stepwise increasing the time; and
a control unit repeating the operation of said unit obtaining a solution of the magnetic field equation and subsequent units using the corrected magnetic field equation.

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b) as per independent claim 11, the claimed:

means for obtaining a time integral of the LLG equation using the solution as an external magnetic field for an unstationary LLG equation;
convergence condition determination means for determining whether or not micromagnetization obtained by the time integral satisfies a convergence condition;
magnetic field equation correction means for correcting the magnetic field equation using the obtained micromagnetization when the convergence condition is not satisfied, and stepwise increasing the time; and
control means for repeating the operation of said means obtaining a solution of the magnetic field equation and subsequent means using the corrected magnetic field equation.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the attached PTO-892.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Assouad whose telephone number is 571-272-2210. The examiner can normally be reached on Tuesday-Friday, 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 571-272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Patrick J Assouad
Primary Examiner
Art Unit 2857

pja